USAF Scientific Advisory Board 2001 Summer Study

Sensor Technology for Difficult Targets

Terms of Reference

BACKGROUND

Sensor technology and associated data processing and communication have evolved rapidly over the last decade. The vision of realistically achievable military capabilities needs to be updated along with the technology investment strategy and future operational capability planning. This is especially true for the difficult ground targets that the Air Force must deal with in today's world. These targets include moving and time critical targets, targets in urban areas, and targets where deception or concealment is involved. Adversaries are attempting to prevent us from finding the targets by hiding underground, under trees, in cities, and by using electronic and physical decoys and other deception techniques

STUDY PRODUCTS

Briefing to SAF/OS & AF/CC in October 2001. Publish report in December 2001.

CHARTER

The study should consider the following issues:

- Multiple sensing modalities (UWB radar, hyperspectral, SIGINT, MASINT, etc)
- Sensor and data fusion.
- Sensor-to-weapon timelines
- Signal processing and transmission (eg levels of onboard processing, data compression)
- Operational concepts for attacks against difficult targets
- System concepts to support the operational concepts (ie continuous coverage, multi function sensing platforms, micro UAVs)

The study will organize and present its findings to give a perspective on sensor technology focused on future military capabilities to the senior leadership of the Air Force. The study will include a Red Team that will consider study conclusions about technologies and systems, and reasonable countermeasures.

The study will provide conclusions and recommendations on the following topics:

- An assessment of the performance and readiness of sensor technologies to address the difficult targets identified in this study
- Operational concepts and associated systems concepts utilizing these technologies
- Prioritization and goals appropriate for a top-level technology investment strategy.